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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/830,183 | 04/23/2004 | Shmuel Erez | | 7716 |

7590 12/22/2006
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| EXAMINER |
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HOFFBERG, ROBERT JOSEPH

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| ART UNIT | PAPER NUMBER |
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2835

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 12/22/2006 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|--------------------|--------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/830,183 | EREZ ET AL. | |
| | Examiner | Art Unit | |
| | Robert J. Hoffberg | 2835 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 19-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-15, 17 and 18 is/are rejected.
- 7) ☒ Claim(s) 7-9 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>12/19/06</u> . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/23/04</u> . | 6) <input type="checkbox"/> Other: _____. |

Detailed Action

Election/Restrictions

1. Applicant's election of Group I (claims 1-18) in the reply filed on 12/11/06 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 19-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/11/06.

Drawings

3. Figure 1A should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: #34g (page 10, line 21). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the

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application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "connection means are adhesive connections" (claims 6 and 13) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

6. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

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Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

7. The disclosure is objected to because of the following informalities:
8. Page 4, line 13, change "heart" to "heat".
9. Page 10, line 12, change "spacer 32" to "spacer 34".
10. Page 10, line 18, change "spacer 32" to "spacer 34".
11. Page 11, line 7, change "heatsink" to "heatsink 30".

Appropriate correction is required.

Claim Objections

12. Claims 5, 10-12 and 17 are objected to because of the following informalities: "said spacer" lacks antecedent basis. For examination purposes "said spacer" will be interpreted as "said insert". Appropriate correction is required.
13. Claims 7-9 and 16 are objected to because of the following informalities: change "selected form" to "selected from". Appropriate correction is required.

Claim Rejections - 35 USC § 112

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
15. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites an "insert have two opposite sides"

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and further states "said at least one insert being attached to said opposite sides". The language of the claim states that the insert is being attached to opposite sides of itself. Examiner is interpreting "said at least one insert being attached to said opposite sides" as "said at least one insert being attached to said first object and said second object" for examination purposes.

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

17. Claims 1-5, 10-12 and 14-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Matteson (US 7,006,353).

Matteson teaches a device for fastener-free connection comprising: a first object (#16); a second object (#12); and at least one insert (#24) made from a heat-shrinkable material installed between said first object and said second object (see Fig. 1), said at least one insert having two opposite sides (#24 top and bottom); said heat-shrinkable material being thermally shrinkable (Col. 5, lines 31-33) in a direction that provides movement of said first object and said second object towards each other during shrinking; said at least one insert being attached to said opposite sides by connection means (#24 is an adhesive); and at least one additional object (#14 or #18) located in a

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space between said first object and said second object; said heat-shrinkable material being capable of shrinking only in one direction (Col. 5, lines 32-37) (claim 1), said at least one additional object is an object that requires removal of heat (Col. 1, line 20) (claim 3), said at least one additional object is an electronic device (#14) (claim 4), wherein one of said first object and said second object comprises support means (#16), while the other of said first object and said second object comprises a heatsink unit (#12); said at least one additional object being supported by said support means (see Fig. 1) and may be heated and require removal of heat when heated (Col. 1, line 20); said at least one additional object having a first contact surface (#14 top) and a height from said support means to said first contact surface; said heat-sink having a second contact (#12 bottom) surface in a heat-transmitting engagement with said first contact surface of said at least one additional object for removal of heat therefrom via said heat-transmitting engagement (through #18); said spacer having a height that exceeds a height from said support means to said first contact surface, said spacer having a degree and direction of shrinking (Col. 5, lines 31-33), at least in the direction of said height of said at least one additional object, that maintain said heat-sink unit and said at least one additional object in said heat-transmitting engagement when said spacer has been shrunk (see Fig. 3) (claim 5), said spacer is made from a solid block (see Fig. 1) (claims 10-12) and said support means is a printed circuit board, and wherein said electronic device is an electronic chip (#14) (claims 14-15).

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 1-6 and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haley et al. (US 5,359,768) in view of Hill et al. (US 4,005,457).

With respect to Claims 1-5, 10-12 and 14-15; Haley et al. teach a device for fastener-free connection comprising: a first object (#105); a second object (#104); and at least one insert (#110) made from a shrinkable material installed between said first object and said second object (see Fig. 1), said at least one insert having two opposite sides (#110 top and bottom); said shrinkable material being shrinkable in a direction (Col. 4, line 5) that provides movement of said first object and said second object towards each other during shrinking; said at least one insert being attached to said first object and said second object by connection means (#110 is an adhesive); and at least one additional object (#111 or #103) located in a space between said first object and said second object; said shrinkable material being capable of shrinking (Col. 4, lines 4-6) only in one direction (claim 1), said at least one additional object is an adhesive material (#111) in an amount sufficient to provide an adhesive connection between said first object and said second object after shrinkage of said at least one insert (see Fig. 1) (claim 2), said at least one additional object (#103) is an object that requires removal of heat (Col. 1, line 68) (claim 3), said at least one additional object is an electronic device

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(#103) (claim 4), wherein one of said first object and said second object comprises support means (#105), while the other of said first object and said second object comprises a heatsink (#104) unit; said at least one additional object (#103) being supported by said support means and may be heated and require removal of heat when heated (Col. 1, line 68); said at least one additional object having a first contact surface (#103) and a height (see Fig. 1) from said support means to said first contact surface; said heat-sink having a second contact surface (#104 bottom) in a heat-transmitting engagement with said first contact surface of said at least one additional object for removal of heat therefrom via said heat-transmitting engagement; said insert having a height (Col. 4, line 3, before adhesive shrinks) that exceeds a height from said support means to said first contact surface, said insert having a degree and direction of shrinking (Col. 4, lines 4-6), at least in the direction of said height of said at least one additional object, that maintain said heat-sink unit and said at least one additional object in said heat-transmitting engagement (see Fig. 1) when said spacer has been shrunk (claim 5), said insert is made from a solid block (#110 is solid) (claims 10-12), said support means is a printed circuit board (#105), and wherein said electronic device is an electronic chip (#103) (claims 14-15). Haley et al. fail to disclose a heat shrinkable material. Hill et al. teaches a heat-shrinkable (Col. 3, lines 55 and 64) material (#40) installed between said first object (#S) and said second object (#D) (claim 1). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the device of Haley et al. with the heat-shrinkable material of Hill et al. for the purpose of providing a high degree of shrinkage during the curing process.

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With respect to Claims 6 and 13, Haley et al. in view of Hill et al. discloses the claimed invention except for adhesive connections. It would have been obvious to one having ordinary skill in the art at the time the invention was made to duplicate the adhesive connection and have adhesive connections, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

20. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haley et al. (US 5,359,768) in view of Hill et al. (US 4,005,457) as applied to claim 5 above, and further in view of Maleski et al. (US 5,571,992).

Haley et al. in view of Hill et al. disclosed the claim invention including the insert being connected to the heatsink and to the support means through a glue (Haley, #110) so that the heatsink is connected to the support means via said insert (claim 17) and said electronic device is an electronic chip (Haley, #103) (claim 18). They fail to teach an insert is made from a heat-shrinkable electrically conductive material, the support means being grounded, the additional object generating electromagnetic radiation and a conductive glue. Haley et al.'s prior art teach a conductive bonding agent (Col. 1, line 43) for electrical contact. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the device of Haley et al. in view of Hill et al. with the conductive glue of Haley et al. for the purpose of providing a method of assembly that includes electrical connections. They fail to teach an insert is made from a heat-shrinkable electrically conductive material, the support means being grounded

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and the additional object generating electromagnetic radiation. Maleski et al. teach an insert (#62) is made from a heat-shrinkable electrically conductive material (Col. 3, lines 9-10). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the device of Haley et al. in view of Hill et al. with the heat-shrinkable electrically conductive material of Maleski et al. for the purpose of providing a electromagnetic shielding. It is well known to one of ordinary skill in the art at the time of the invention that a support means (circuit board) is grounded because the support means provides electrical connections including ground to the addition object (electronic chip) and that the addition object generates electromagnetic radiation during operation as a result of changes in the electrical states of its elements.

Allowable Subject Matter

21. Claims 7-9 and 16 are objected to as outlined in the claim objection above and being dependent upon a rejected base claim and the claim objection above, but would be allowable if the claim objection is corrected and are rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. The following is a statement of reasons for the indication of allowable subject matter: Claims 7-9 and 16 are allowable over the art of record because the prior art does not teach or suggest that a heat-shrinkable plastic capable of shrinking only in one direction that is selected from the group consisting of a radiation cross-linked heat-shrinkable polyolefin and a heat-shrinkable fluorocarbon-based material being capable of shrinking only in one direction and installed between a first object and a second object providing movement of the first object and second object towards each other

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during shrinking. The aforementioned limitations in combination with all remaining limitations of the respective claims are believed to render said claims 7-9 and 16 patentable over art of record.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yoshida (JP 04-254343) discloses a heat shrinkable member between an electronic chip and a support means that provides movement of the electronic chip towards the support means. Hirai et al. (US 5,331,513) and Nakatsuka et al. (JP 09-027515) disclose a heat shrinkable member to retain an electronic chip to a support means.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert J. Hoffberg whose telephone number is (571) 272-2761. The examiner can normally be reached on 8:30 AM - 4:30 PM Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RJH

MICHAEL DATSKOVSKIY
PRIMARY EXAMINER

Michael Datskovskiy
12/21/06